Notched Rainbow

Villosa constricta

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DESCRIPTION

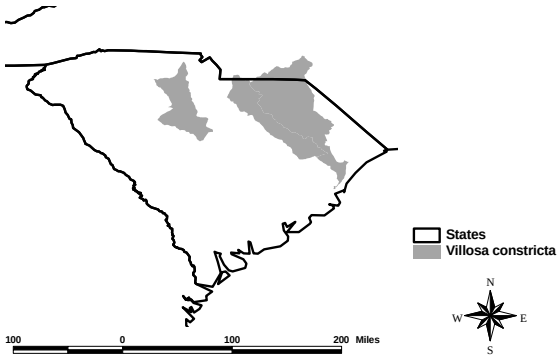
Taxonomy and Basic Description

The shell of the notched rainbow is rather small and short and is subelliptical in shape. The shell of the female has a posterior point a little more than midway up from the base with a small swelling along the outline. The shell of the male is often subrhomboid with the posterior point generally less than midway up from the base. The outer surface of the notched rainbow's shell is yellowish-green or green and has indistinct rays. The inner surface of the shell is bluish, sometimes purplish in the center and sometimes thicker in front (Bogan and Alderman 2004).

Status

NatureServe (2005) currently identifies the notched rainbow with as vulnerable (G3) globally. This species is also considered vulnerable (S3) in both Virginia and North Carolina; however, the notched rainbow is not currently ranked in South Carolina. It is a species of special concern in South Carolina.

POPULATION DISTRIBUTION AND SIZE



The notched rainbow ranges from the Rappahannock River basin in Virginia to the Santee-Cooper basin in South Carolina (Johnson 1970). In South Carolina, it has been more recently found in the headwaters of the Lynches River, Hills Creek, Black Creek and Deep Creek in the Pee Dee drainage as well as in the Little Sandy River in the Broad River basin. It has declined in many portions of its range, especially in the larger rivers. The notched rainbow appears to have been extirpated from the Rappahannock River drainage in Virginia (Taxonomic Expertise Committee 2004).

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

This species is found in riffles, runs and pools of streams and large rivers. It prefers sandy or sand and gravel substrates only in very clean, high-quality habitat.

CHALLENGES

The notched rainbow appears to share the same challenges as most mussel species. Observations suggest that this species is sensitive to channel modification, pollution, sedimentation, and low oxygen conditions. Its apparent restriction to very clean water suggests that it might be even more sensitive to pollutants and sedimentation than other species, although the extent to which specific activities affect the notched rainbow are not very well understood (Taxonomic Expertise Committee 2004).

CONSERVATION ACCOMPLISHMENTS

There are no significant conservation accomplishments for the notched rainbow at this time.

CONSERVATION RECOMMENDATIONS

- Conduct surveys to determine population status and distribution of the notched rainbow. Closely monitor known populations and any additional populations discovered in the surveys.
- Explore the need to list the notched rainbow within South Carolina, based on survey results.
- Protect critical habitats for the notched rainbow from future development and further habitat degradation by following best management practices and protecting and purchasing riparian areas.
- Promote land stewardship practices through educational programs both within critical habitats with healthy populations and other areas that contain available habitat for the notched rainbow.
- Encourage responsible land use planning.
- Consider species needs when participating in the environmental permit review process.
- Educate off-road motor vehicle operators of the negative affects of crossing streams at multiple locations and using stream bottoms as trails.
- Conduct further research to determine the degree of sensitivity of the notched rainbow to various point and nonpoint source pollution sources and land use impacts.

MEASURES OF SUCCESS

Persistence of known populations and an increase in their size will indicate the success of management activities.